Amendments to the Claims

Please cancel, without prejudice or disclaimer, claims 1-19, and add new claims 20-74, as follows:

--20. (new) A method for manufacturing a glass preform, comprising:

supplying a first gaseous or vapor phase composition to a reaction chamber, wherein the first gaseous or vapor phase composition is disposed to provide a hydrolyzable glass precursor;

supplying water as a second gaseous or vapor phase composition to the reaction chamber;

reacting the water and the first gaseous or vapor phase composition in the reaction chamber to form an aerosol of glass particles;

providing a temperature gradient to walls of the reaction chamber, wherein, according to the temperature gradient, a temperature of the walls increases in a direction of a flow of the aerosol along the reaction chamber;

directing the aerosol along the reaction chamber, out of the reaction chamber, and toward a target; and

depositing glass particles of the aerosol onto the target.

21. (new) The method of claim 20, wherein a temperature of the walls of the reaction chamber is greater than or equal to about 1,200 °C.

22. (new) The method of claim 20, wherein a temperature of the walls of the reaction chamber is less than or equal to about 1,600 °C.

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23. (new) The method of claim 20, wherein a temperature of the walls of the reaction chamber is greater than or equal to about 1,200 °C and less than or equal to about 1,600 °C.

24. (new) The method of claim 20, wherein the aerosol comprises a first temperature at a time of formation of the aerosol, and

wherein the first temperature is about 700 °C.

25. (new) The method of claim 20, wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is about 1,200 °C.

26. (new) The method of claim 20, wherein a temperature of the aerosol in the reaction chamber is greater than about 700 °C and less than about 1,200 °C.

27. (new) The method of claim 20, wherein the aerosol comprises a first temperature at a time of formation of the aerosol,

wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is greater than the first temperature by at least about 100 °C.

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28. (new) The method of claim 20, wherein the aerosol comprises a first temperature at a time of formation of the aerosol,

wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is greater than the first temperature by about 300 °C.

29. (new) The method of claim 20, wherein the aerosol comprises a first temperature at a time of formation of the aerosol,

wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is greater than the first temperature by about 500 °C.

30. (new) The method of claim 20, wherein a temperature of the first gaseous or vapor phase composition supplied to the reaction chamber is below a predetermined temperature, and

wherein a temperature of the second gaseous or vapor phase composition supplied to the reaction chamber is below the predetermined temperature.

31. (new) The method of claim 30, wherein the predetermined temperature is a temperature at which a hydrolysis reaction between the first and second gaseous or vapor phase compositions is substantially incomplete.

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32. (new) The method of claim 30, wherein the predetermined temperature is less than about 800 °C.

33. (new) The method of claim 30, wherein the predetermined temperature is greater than or equal to about 600 °C and less than or equal to about 750 °C.

34. (new) The method of claim 30, wherein the predetermined temperature is about 700 °C.

35. (new) The method of claim 20, wherein a temperature of the target is greater than about 700 °C.

36. (new) The method of claim 20, wherein a temperature of the target is greater than about 800 °C.

37. (new) The method of claim 20, wherein a temperature of the target is less than a temperature of a stream of the aerosol impacting the target.

38. (new) The method of claim 20, wherein a temperature of the target is at least 100 °C less than a temperature of a stream of the aerosol impacting the target.

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39. (new) The method of claim 20, wherein a temperature of a stream of the aerosol impacting the target is greater than or equal to about 800 °C.

40. (new) The method of claim 20, wherein a temperature of a stream of the aerosol impacting the target is greater than or equal to about 900 °C.

41. (new) The method of claim 20, wherein a temperature of a stream of the aerosol close to impacting the target is greater than or equal to about 1,000 °C and less than or equal to about 1,500 °C.

42. (new) The method of claim 20, wherein the reaction chamber comprises convergent walls, and

wherein the aerosol is directed toward the target by the convergent walls.

43. (new) The method of claim 20, wherein the first and second gaseous or vapor phase compositions are reacted in a substantial absence of an unreactive carrier gas, an aerosol-free gas stream, or an unreactive carrier gas and an aerosol-free gas stream.

44. (new) The method of claim 20, further comprising:

shifting a mixing point of the first and second gaseous or vapor phase compositions using an inert-gas buffer.

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45. (new) The method of claim 20, wherein, for a given distance along the reaction chamber:

the aerosol at an axis of the reaction chamber comprises a first temperature,

the walls of the reaction chamber comprise a second temperature, and

wherein the second temperature is greater than the first temperature by at least 100 °C.

46. (new) The method of claim 20, wherein, for a given distance along the reaction chamber:

the aerosol at an axis of the reaction chamber comprises a first temperature,

the walls of the reaction chamber comprise a second temperature, and

wherein the second temperature is greater than the first temperature by at least about 300 °C.

47. (new) The method of claim 20, wherein the first gaseous or vapor phase composition is obtained by heating, under pressure, the first composition contained as pure liquid in a first supply tank,

wherein the second gaseous or vapor phase composition is obtained by heating, under pressure, the second composition contained as pure liquid in a second supply tank, and

wherein the first and second compositions are heated separately.

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48. (new) A method for manufacturing a glass preform, comprising:

supplying a first gaseous or vapor phase composition to a reaction chamber, wherein the first gaseous or vapor phase composition is disposed to provide a hydrolyzable glass precursor;

supplying water as a second gaseous or vapor phase composition to the reaction chamber;

reacting the water and the first gaseous or vapor phase composition in the reaction chamber to form an aerosol of glass particles;

directing the aerosol along the reaction chamber, out of the reaction chamber, and toward a target; and

depositing glass particles of the aerosol onto the target;

wherein the first and second gaseous or vapor phase compositions are reacted in a substantial absence of an unreactive carrier gas, an aerosol-free gas stream, or an unreactive carrier gas and an aerosol-free gas stream,

wherein a flow of the aerosol along the reaction chamber has a temperature gradient, and

wherein, according to the temperature gradient, a temperature of the aerosol increases in a direction of the flow.

49. (new) The method of claim 48, wherein a temperature of walls of the reaction chamber is greater than or equal to about 1,200 °C.

50. (new) The method of claim 48, wherein a temperature of walls of the reaction chamber is less than or equal to about 1,600 °C.

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51. (new) The method of claim 48, wherein a temperature of walls of the reaction chamber is greater than or equal to about 1,200 °C and less than or equal to about 1,600 °C.

52. (new) The method of claim 48, wherein the aerosol comprises a first temperature at a time of formation of the aerosol, and

wherein the first temperature is about 700 °C.

53. (new) The method of claim 48, wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is about 1,200 °C.

54. (new) The method of claim 48, wherein a temperature of the aerosol in the reaction chamber is greater than about 700 °C and less than about 1,200 °C.

55. (new) The method of claim 48, wherein the aerosol comprises a first temperature at a time of formation of the aerosol,

wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is greater than the first temperature by at least about 100 °C.

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56. (new) The method of claim 48, wherein the aerosol comprises a first temperature at a time of formation of the aerosol,

wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is greater than the first temperature by about 300 °C.

57. (new) The method of claim 48, wherein the aerosol comprises a first temperature at a time of formation of the aerosol,

wherein the aerosol comprises a second temperature as the aerosol is directed out of the reaction chamber, and

wherein the second temperature is greater than the first temperature by about 500 °C.

58. (new) The method of claim 48, wherein a temperature of the first gaseous or vapor phase composition supplied to the reaction chamber is below a predetermined temperature, and

wherein a temperature of the second gaseous or vapor phase composition supplied to the reaction chamber is below the predetermined temperature.

59. (new) The method of claim 58, wherein the predetermined temperature is a temperature at which a hydrolysis reaction between the first and second gaseous or vapor phase compositions is substantially incomplete.

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60. (new) The method of claim 58, wherein the predetermined temperature is less than about 800 °C.

61. (new) The method of claim 58, wherein the predetermined temperature is greater than or equal to about 600 °C and less than or equal to about 750 °C.

62. (new) The method of claim 58, wherein the predetermined temperature is about 700 °C.

63. (new) The method of claim 48, wherein a temperature of the target is greater than about 700 °C.

64. (new) The method of claim 48, wherein a temperature of the target is greater than about 800 °C.

65. (new) The method of claim 48, wherein a temperature of the target is less than a temperature of a stream of the aerosol impacting the target.

66. (new) The method of claim 48, wherein a temperature of the target is at least 100 °C less than a temperature of a stream of the aerosol impacting the target.

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67. (new) The method of claim 48, wherein a temperature of a stream of the aerosol impacting the target is greater than or equal to about 800 °C.

68. (new) The method of claim 48, wherein a temperature of a stream of the aerosol impacting the target is greater than or equal to about 900 °C.

69. (new) The method of claim 48, wherein a temperature of a stream of the aerosol close to impacting the target is greater than or equal to about 1,000 °C and less than or equal to about 1,500 °C.

70. (new) The method of claim 48, wherein the reaction chamber comprises convergent walls, and

wherein the aerosol is directed toward the target by the convergent walls.

71. (new) The method of claim 48, further comprising:

shifting a mixing point of the first and second gaseous or vapor phase compositions using an inert-gas buffer.

72. (new) The method of claim 48, wherein, for a given distance along the reaction chamber:

the aerosol at an axis of the reaction chamber comprises a first temperature,

a wall of the reaction chamber comprises a second temperature, and

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